Archives of Biochemistry and Biophysics

Editors

PAUL D. BOYER
JESSE P. GREENSTEIN
J. G. KIRKWOOD
HENRY LARDY
LUIS F. LELOIR
K. LINDERSTRØM-LANG
C. M. MCCAY
W. D. MCELROY
THOMAS L. MCMEEKIN
H. S. MASON
A. NEUBERGER
F. F. NORD
E. C. POLLARD
E. W. PUTNAM
C. RIMINGTON
HOWARD K. SCHACHMAN
JOHN C. SHEEHAN
H. THEORELL
K. V. THIMANN
W. W. UMBREIT
C. H. WERKMAN
R. J. WILLIAMS
R. W. G. WYCKOFF

VOLUME 76

1958

ACADEMIC PRESS INC., PUBLISHERS

©, 1958, by Academic Press Inc.
Made in United States of America

CONTENTS OF VOLUME 76

Number 1, July, 1958

Harry P. Rappaport. Induction of a Lysogenic *Escherichia coli* with Alpha and Deuteron Particles 1

R. H. Backderf and J. B. Brown. Further Contributions to the Nature of the Monoethenoic Fatty Acids of Butterfat 15

J. Sri Ram and Paul H. Maurer. Modified Bovine Serum Albumin. V. Immunochemical and Other Studies of Bovine Serum Albumin, after Precipitation with Trichloroacetic Acid and Solution in Ethanol 28

Robert N. Feinstein, Sara Berliner and Frank O. Green. Mechanism of Inhibition of Catalase by 3-Amino-1,2,4-triazole 32

Arthur J. Tomisek, Harold J. Kelly, Mary R. Reid and Howard E. Skipper. Chromatographic Studies of Purine Metabolism. II. The Mechanism of *E. coli* Inhibition by A-Methopterin 45

Peter D. Klein. Linoleic Acid and Cholesterol Metabolism in the Rat. I. The Effect of Dietary Fat and Linoleic Acid Levels on the Content and Composition of Cholesterol Esters in Liver and Plasma 56

Erwin Schwenk and George J. Alexander. Biogenesis of Yeast Sterols. II. Formation of Ergosterol in Yeast Homogenates .. 65

David W. Krogmann. The Pyridine Nucleotide Content of Isolated Chloroplasts 75

Irvin D. Steinman, Venkatram N. Iyer and Waclaw Szybalski. The Mechanism of Chemical Mutagenesis. II. Interactions of Selected Compounds with Manganous Chloride 78

Robert C. Krueger. The Role of Reducing Agents in the Action of Tyrosinase 87

Olga O. Blumenfeld and Milton Levy. Spectrophotometric and Stoichiometric Titrations of Ribonuclease in Eight Molar Urea 97

Isamu Suzuki and C. H. Werkman. Chemoautotrophic Carbon Dioxide Fixation by Extracts of *Thiobacillus thiooxidans*. I. Formation of Oxalacetic Acid 103

Ho Lee Young and Nello Pace. Distribution of α-Glycerophosphate Dehydrogenase in Normal Rats 112

John H. Bryant, Irwin G. Leder and DeWitt Stetten, Jr. The Release of Chondroitin Sulfate from Rabbit Cartilage Following the Intravenous Injection of Crude Papain 122

Sarah Clevenger. The Flavonols of *Impatiens balsamina* L..... 13
Alvie L. Davis, Joanne M. Ravel, Charles G. Skinner and William Shive. The Synthesis and Biological Activity of Some Diamino Acid Analogs..... 13
Ignacio Tinoco, Jr. The α-Chymotrypsin Catalyzed Hydrolysis of Ethyl Lactate..... 14
A. R. Goldfarb, E. Hoffmann and N. Gutstein. Absorption Spectrum of the Peptide Bond: Basic Properties of Peptides and Proteins..... 16
I. C. Anderson and R. C. Fuller. Photophosphorylation by Isolated Chromatophores of the Purple Sulfur Bacteria..... 16
Pran Vohra, Fayne Lantz and F. H. Kratzer. Study of the Reaction of Formaldehyde with Vitamin B_{12}..... 18
F. B. Gailey and N. E. Tolbert. Effect of Ionizing Radiation on the Development of Photosynthesis in Etiolated Wheat Leaves..... 18
L. P. Zill and N. E. Tolbert. The Effect of Ionizing and Ultraviolet Radiations on Photosynthesis..... 19
W. Cohen, M. Bier and F. F. Nord. On the Mechanism of Enzyme Action. LXVI. Comparative Studies on Acid Phosphatases..... 20
Paolo Cerletti and Noris Siliprandi. Pure Crystalline Flavine Adenine Dinucleotide..... 21
Letters to the Editors
Paul O. P. Ts'o, James Bonner and Howard Dintzis. On the Similarity of Amino Acid Composition of Microsomal Nucleoprotein Particles..... 22
M. E. Pullman, H. Penefsky and E. Racker. A Soluble Protein Fraction Required for Coupling Phosphorylation to Oxidation in Submitochondrial Fragments of Beef Heart Mitochondria..... 22
H. George Mandel. Effect of 8-Azaguanine on Utilization of Methionine by *B. cereus*..... 23
James L. Hatchett and Rudolph J. Marcus. A New Electron Acceptor for the Hill Reaction..... 23
Book Reviews..... 23

Number 2, August, 1958

Paul J. Fodor, Philip Tomashefsky and Casimir Funk. Enzyme Levels in the Growing and Spontaneously Regressing Flexner-Jobling Carcinoma. III. The Breakdown of ATP to Inosine and its Effect on Glycolysis..... 24

Arthur Lietze, Felix Haurowitz and James E. Turner. Concentration of Glycine in Duck Erythrocytes 255
Ulla Hamberg and H. F. Deutsch. A Large Scale Preparation of Bradykinin 262
Yoshiyuki Inouye and Manjiro Noda. Paper Chromatography of Egg Lecithins 271
Daniel W. Thomas and Arthur E. Martell. Visible and Ultraviolet Absorption Spectra of Metal Chelates of *para*-Substituted Tetraphenylporphines 286
Sarang N. Iyer and R. E. Kallio. Bacterial Degradation of Methylurea 295
Jeanne M. Lagowski, Harold M. Sell, C. F. Huffman and C. W. Duncan. The Carbohydrates in Alfalfa *Medicago sativa*. I. General Composition, Identification of a Nonreducing Sugar and Investigation of the Pectic Substances 306
Harold A. Neufeld, Frances M. Latterell, Lonzo F. Green and Robert L. Weintraub. Oxidation of *meta*-Polyhydroxyphenols by Enzymes from *Piricularia oryzae* and *Polyporus versicolor* 317
Otto H. Müller and Itsuro Yamanouchi. Stable Solutions of Trypsin 328
C. A. Zittle, E. S. DellaMonica, R. K. Rudd and J. H. Custer. Binding of Calcium to Casein: Influence of pH and Calcium and Phosphate Concentrations 342
Eleanor Wixom Helper, Michael J. Carver, Herbert P. Jacobi and Jackson A. Smith. The Effect of Tranquilizing Agents and Related Compounds on the Succinoxidase Systems 354
Vernon R. Mattox and Marvin L. Lewbart. New Zaffaroni-Type Solvent Systems for Chromatography of Relatively Polar Steroids 362
Oscar W. Portman and Paul Murphy. Excretion of Bile Acids and β-Hydroxysterols by Rats 367
W. J. Wolf and D. R. Briggs. Studies on the Cold-Insoluble Fractions of the Water-Extractable Soybean Proteins. II. Factors Influencing Conformation Changes in the 11*S* Component 377
Harry Sobel, Sara M. Myers and Fay Cohen. The Rates of Growth of Protein Fractions of the Heart and Kidney of the Rat 394
Leo J. Saidel and Howard Lieberman. Ultraviolet Absorption Spectra of Peptides. IV. Alanine Residue 401

Setsuro Ebashi. A Granule-Bound Relaxation Factor in Skeletal Muscle 41
Helen M. Habermann and Leo P. Vernon. Isotope Experiments ments on the 2,6-Dichlorophenolindophenol-Mediated Oxidation of Ascorbic Acid by Illuminated Chloroplasts 42
Piero Gullino, Sanford M. Birnbaum, Milton Winitz and Jesse P. Greenstein. Studies on the Metabolism of Amino Acids and Compounds *in Vivo*. VIII. Influence of the Route of Administration of L-Arginine. HCL on Protecting Rats Against Ammonia Toxicity 43
Lynferd J. Wickerham. Evidence of the Production of Extracellular Invertase by Certain Strains of Yeasts 43
Robert G. Dworschack and Lynferd J. Wickerham. Production of Extracellular Invertase by the Yeast, *Saccharomyces uvarum* NRRL Y-972 44
Robert Brunish and Amos Norman. X-Ray Inactivation of Hyaluronidase from *Escherichia coli freundii* and Bovine Testes 45
Eugene F. Jansen, Rosie Jang and A. K. Balls. Citrus Aminopeptidases 46
L. Lahut Uzman. Lipophilic Peptides and Proteins of Brain. I. Their Relation to Development of the Brain and Myelin Formation 47
L. Lahut Uzman and Hyman Rosen. Lipophilic Peptides and Proteins of Brain. II. Composition of the Neurosclerin Fraction .. 49
James B. Ragland and James L. Liverman. Sulfate Inhibition of Thiosulphate Utilization by Certain Strains of *Neurospora crassa* 49
Britton Chance and Bertram Sacktor. Respiratory Metabolism of Insect Flight Muscle. II. Kinetics of Respiratory Enzymes in Flight Muscle Sarcosomes 50
Ronald W. Estabrook and Bertram Sacktor. The Respiratory Metabolism of Insect Flight Muscle. III. Low Temperature Spectra of the Cytochromes of Flight Muscle Sarcosomes 53
Letters to the Editors
Ernest Kovacs. Rapid Method for Dissolution of Cells Suitable for Total Protein and Nucleic Acid Determination in Tissue Cultures 54
Nobuhiko Katunuma. Adenyl Amidate as Active Intermediate in the Fixation of the Amino Group of Amino Acid .. 54
Book Reviews 54

Books Received for Review 554
Correction: Luddo B. Ninninga. The Binding of Magnesium, Calcium, and Chlorine Ions to Heavy and Light Meromysin 556
Erratum 557
Author Index 558
Subject Index 560
Index on Book Reviews 561